acetaldehyde in proportions according to the preceding examples and with approximately similar results.

Example VI.

100 parts of vinyl formate are treated with formaldehyde according to any of Examples I to IV with generally similar results.

Proceeding in a manner similar to that given in the examples, products may be obtained using vinyl butyrate and vinyl esters of higher molecular weight, also various aldehydes, such as butyraldehyde and aldehydes of higher molecular weight, may be used. The process may also be conducted substituting vinyl ethers, vinyl halides or other ethylene linkage bodies for the vinyl esters. The term "aldehydic bodies" hereinbefore used designates such bodies as will liberate an aldehyde during progress of the reaction, for example, paraldehyde, and more particularly if a trace of mineral acid is present which serves to decompose the paraldehyde. In the same way, bodies of the acetal type may be utilized under conditions such that they will liberate aldehyde.

It is necessary in carrying out the process that the materials used be of a certain degree of purity, since the presence of certain impurities has detrimental effect on the reaction or may completely inhibit the reaction. Sulphur and certain of its compounds are bodies which inhibit reaction and iron or copper and certain compounds thereof have detrimental effect. For this reason, it is important to avoid the use of iron or copper apparatus. The process may be conducted satisfactorily in vessels of glass, porcelain, enamel or aluminum.

The carrying out of the process is not confined to the bombing treatment but may be carried out by heating the reaction mixture under a reflux condenser, the time of reaction being considerably increased by such a procedure.

While the time and temperature disclosed in the examples are sixteen hours and 100°, it will be understood that many variations in time and temperature may be made and desirable results obtained. Reaction to a commercial extent may sometimes be obtained in six hours or less and, especially when lower temperatures are employed, the time of reaction may be extended to days or even weeks. The temperature may vary between ordinary room temperature, say 25° C., and as much above 100° C. as it is possible to go without occasioning undesirable decomposition of the product or the constituents of the reaction mixture. The pressure may also be varied as desired. For instance, using 10 to 15 parts of acetaldehyde to 100 parts of vinyl acetate at atmospheric temperature and pressure, the reaction will proceed slowly and will take several weeks to go to completion.

It will be understood that, while the proportions given in the examples range between one-tenth of one part and 100 parts of aldehyde to 100 parts of vinyl compound, the invention is not confined to this range.

Having thus described our invention, what we claim is:—

1. A process of making gummy or resinous products, which comprises reacting together a body containing an ethylene linkage and a saturated aliphatic aldehyde.

2. A process of making gummy or resinous products, which comprises reacting together a body containing an ethylene linkage and a saturated aliphatic aldehyde with heating and under pressure.

3. A process of making gummy or resinous products, which comprises reacting together a vinyl ester and a saturated aliphatic aldehyde.

4. A process of making gummy or resinous products, which comprises reacting together a vinyl ester and acetaldehyde.

5. A process of making gummy or resinous materials, which comprises reacting together vinyl acetate and a saturated aliphatic aldehyde.

6. A process of making gummy or resinous products, which comprises reacting together vinyl acetate and acetaldehyde.

7. A process of making gummy or resinous products which comprises reacting together a body containing an ethylene linkage and a saturated aliphatic aldehyde in presence of oxygen.

8. A process of making gummy or resinous products, which comprises reacting together a body containing an ethylene linkage and a saturated aliphatic aldehyde with heating and under pressure in presence of oxygen.

9. A process of making gummy or resinous products, which comprises reacting together 100 parts of a body containing an ethylene linkage and one-tenth of one part to upwards of 100 parts of a saturated aliphatic aldehyde.

10. A composition of matter resulting from reacting together a body containing an ethylene linkage and a saturated aliphatic aldehyde.

11. A composition of matter resulting from reacting together a body containing an ethylene linkage and a saturated aliphatic aldehyde with heating and under pressure.

12. A composition of matter resulting from reacting together a vinyl ester and a saturated aliphatic aldehyde.

13. A composition of matter resulting from reacting together a vinyl ester and acetaldehyde.